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REMARKS

The Office Action rejected claims 8-14 and 21 under 35 U.S.C. 101 "because the claimed invention is directed to non-statutory subject matter." Claim 8 is amended herein so that it is directed to "a superframe formed within a transmitting wireless device for carrying data communications intended for a plurality of user terminals." The superframe of claim 8 is directed to a data structure formed within a device. The structure of claim 8 is akin to a computer readable medium and is an article of manufacture claim. For this reason, claim 8 and claims 9-14, which depend from claim 8 are directed to statutory subject matter and the 101 rejection is overcome by these amendments.

The 35 U.S.C. 101 rejection of claim 21 is respectfully traversed. Claim 21 is directed to a base station and the elements of claim 21 include an antenna, a Radio Frequency unit, and at least one digital processor. These tangible elements in combination are an apparatus and, for this reason, claim 21 satisfies 35 U.S.C. 101. The rejection of claim 21 under 35 U.S.C. 101 is improper and must be withdrawn.

The Office Action indicates that claims 5, 7, 12, 14, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Claim 24 is allowed. Applicants thank the Examiner for these indications.

Claims 1, 2, 8, 9, and 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hiyama et al. (U.S. Patent No. 4,855,995 "Hiyama") in view of Balachandran et al. (U.S. Patent No. 6,996,083 B1 "Balachandran"). Claims 6, 13, 19 and 21-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hiyama in view of Balachandran and further in view of Mochizuki (U.S. Patent No. 6,628,633 B1). Claims 3, 4, 10, 11, 17, 19, and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hiyama in view of Balachandran and further

in view of Rydbeck et al. (U.S. Patent No. 6,332,006 B1 "Rydbeck"). All of these rejections of the pending claims based upon the cited prior art are respectfully traversed.

Summary of the Claimed Subject Matter

The claims of the present application all relate to superframe structures employed in servicing high data rate wireless communications. In particular, the claims are directed the structure of a wirelessly transmitted superframe, methods for forming and wirelessly transmitting the superframe by a base station, methods for wirelessly receiving and extracting data from the superframe by a user terminal, a base station that forms and wirelessly transmits the superframe, a user terminal that wirelessly receives data carried by the superframe, computer software instructions that, when executed, cause a base station to wirelessly transmit the superframe, and computer software instructions that, when executed, cause a user terminal to wirelessly receive the superframe.

Claim 1, for example, is directed to a method for operating a base station to wirelessly transmit data communications to a plurality of user terminals on a single wireless carrier. The base station repeatedly and sequentially wirelessly transmits time division multiplexed superframes to the plurality of user terminals. Diagram 1 illustrates one embodiment of a superframe structure according to the present application.

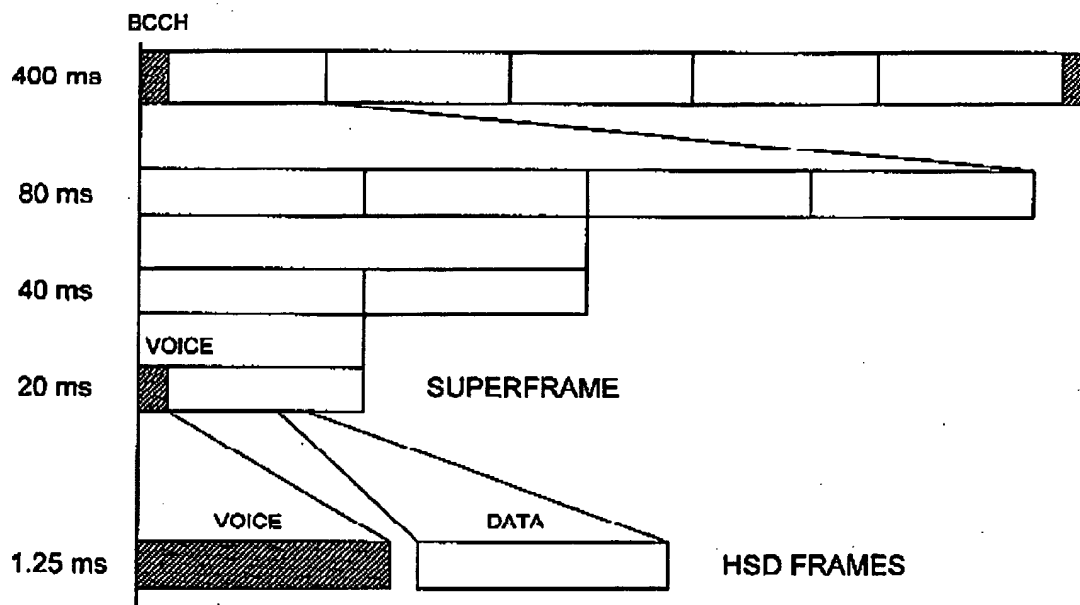


Diagram 1 - Superframe Structure (FIG. 2 of the present Application)

As shown in Diagram 1, each 20 ms time division multiplexed superframe carries a plurality of high speed data frames (HSD frames). Claim 1 requires that each of these high speed data frames carries at least one data communication and that each of these high speed data frames includes: (1) a respective indication of at least one user terminal for which the at least one data communication is intended; and (2) a respective indication of at least one data rate of the high speed data frame.

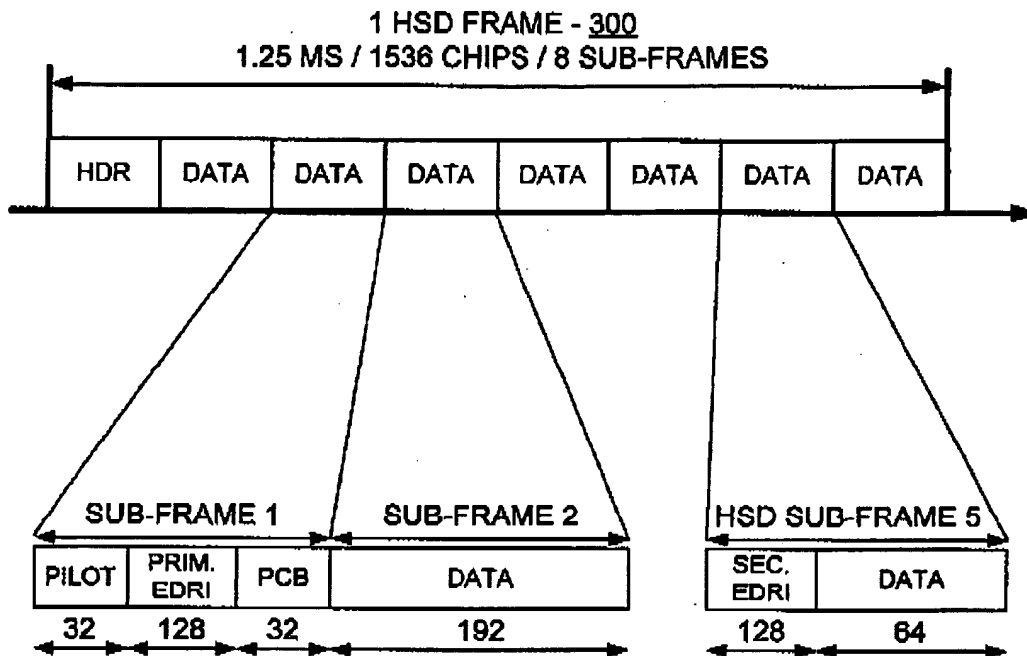


Diagram 2 - High Speed Data Frame Structure (FIG. 3 of the present Application)

Diagram 2 (FIG. 3 of the present application) illustrates one embodiment of a high speed data frame according to the present invention. With the language of claim 1 applied to Diagram 2, the “respective indication of at least one user terminal for which the at least one data communication is intended” and the “respective indication of at least one data rate of the high speed data frame” are included with of the explicit data rate indicator (EDRI). As stated in the specification of the present application at page 13, line 21 through page 14, line 4, (referring to FIG. 3 of the present application):

10 *“The primary EDRI (and secondary EDRI, when included) provides an explicit indication of the data rate(s) for data contained in the HSD frame 300, the identities of the user terminal(s) for whom the data is intended, and the relative position of the data within the HSD frame 300. As will be further described with reference to FIGs. 7 and 8, when the HSD frame contains both voice and data communications, the EDRI may also provide*

additional information relating to the voice communication. In the data only embodiment of FIG. 3, the EDRI includes a plurality of bits to indicate a data rate for the HSD frame 300, one bit to indicate that the HSD frame 300 carries data, and a plurality of bits to identify one or more user terminals for which the data in the HSD frame 300 is intended."

5 The combination of Hiyama and Balachandran does not render obvious claims 1, 2, 8, 9 and 15.

The Office Action cites Hiyama as disclosing, among other elements of claim 1, both: (1) a respective indication of at least one user terminal for which the at least one data communication is intended; and (2) a respective indication of at least one data rate of the high speed data frame. The Office Action cites Hiyama at various locations as disclosing this limitation, including the Abstract, Fig. 1, Fig. 2G, col. 3, lines 15-45, col. 5, lines 52-60, and col. 1, lines 10-15. This is incorrect. Hiyama simply fails to disclose a frame structure that includes "a respective indication of at least one data rate of the high speed data frame."

A careful and thorough reading reveals that Hiyama discloses a "frame construction" having a synchronous region X and an information channel region Y (col. 13, lines 48-49). A bit pattern of 10 bits for synchronization is introduced into each channel of the synchronous region X. The information channel region Y may include an "information channel region" (Fig. 2A), "link control" and "line switching" regions (Fig. 2B), a "packet switching region" (Figs. 2C and 2D), or "link control region", "line switching region", and "packet switching region." The information channel region Y may identify a destination device. Further, the information channel region Y may carry data to identify both a source device and a destination device. The information channel region Y of Hiyama may include a valid/invalid bit B_{01} (Col. 5, lines 27-59). This valid/invalid bit, however, only indicates whether corresponding data of the frame is valid, not "at least one data rate of the high speed data frame" as is required by claim 1. Hiyama

simply fails to disclose a high speed data frame that includes "at least one data rate of the high speed data frame."

Balachandran is cited for teaching a base station that transmits time division multiplexed frames. Balachandran is *not cited for teaching and does not teach* a frame structure that includes

5 "a respective indication of at least one data rate of the high speed data frame" as is required by claim 1. Thus, the combination of Hiyama and Balachandran fails to render obvious claim 1. Independent claims 8 and 15, and 21-24 include limitations similar to those of claim 1. For these same reasons, the combination of Hiyama and Balachandran does not render obvious independent claims 8 and 15. Claim 2, which depends from claim 1, and claim 9, which depends
10 from claim 8, are not rendered obvious by the combination of Hiyama and Balachandran for these same reasons.

The combination of Hiyama, Balachandran, and Mochizuki does not render obvious claims 6, 13, 19 and 21-23.

15 Claim 6 depends from claim 1. Claim 13 depends from claim 8. Claim 19 depends from claim 15. Mochizuki fails to remedy the shortcomings of the combination of Hiyama and Balachandran. For this reason claims 6, 13, and 19 are not rendered obvious by the combination of Hiyama, Balachandran, and Mochizuki. Claims 21, 22, and 23 include limitations same/similar to claim 1. Thus, for the reasons cited above, claims 21, 22, and 23 are not rendered obvious by the combination of Hiyama, Balachandran, and Mochizuki.

20 The combination of Hiyama, Balachandran, and Rydbeck does not render obvious claims 3, 4, 10, 11, 17, and 20.

Claims 3 and 4 depend from claim 1. Claims 10 and 11 depend from claim 8. Claims 17 and 20 depend from claim 15. Rydbeck fails to remedy the shortcomings of the combination of Hiyama and Balachandran. For this reason claims 3, 4, 10, 11, 17, and 20 are not rendered

obvious by the combination of Hiyama, Balachandran, and Rydbeck.

All claims are now allowable and a notice of allowance is courteously solicited. Please direct any questions or comments to the undersigned attorney.

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Respectfully submitted,

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